

Gray Herbarium



Harvard University

B. L. ROBINSON, Curator,
Asa Gray Prof. Syst. Bot.
M. L. FERNALD,
Fisher Prof. Nat. Hist. (Bot.)
J. F. MACBRIDE, Assistant
H. ST. JOHN, Assistant
MARY A. DAY, Librarian

CAMBRIDGE, MASSACHUSETTS, U. S. A.

June 10, 1918.

Mr. I. M. Johnston,
Upland, California.

My dear Mr. Johnston:

The package of plants reached me in good shape and much to my delight I found it possible to turn my attention to the specimens rather soon.

989. This is a rather frequent form of A. Douglasiana A. DC. which I have regarded as merely an ecological state. Thanks for the addition material in this group; the specimen of A. parviflora is very typical. 1726, 1530, forms I think of the same thing. At present I can refer them only to E. microthecum. They may, however, constitute a good variety. I am not sure that Jepson is right in reducing E. corymbosum of the southwestern United States to this species. It looks somewhat different and possibly your specimens belong here.

I have gone over the Arabis arcuata situation again with some care and I still feel that your common Arabis with the sickle-like pods belongs to A. arcuata (Nutt.) Gray. 1952 is A. arcuata, var. subvillosa Wats. Notice the abundance of simple or merely branched, rather than stellate, hairs. This variety passes into the typical canescently stellate form. Your no. 1952, tho, seems to represent the variety well. It is also more glabrous above than is frequently the case in A. arcuata. 1956 and 1951, then, are to be referred to the species itself. 1359 because of the short pods suggests a transition toward A. perennans, but I think that in this case the short pods represent merely the variation of an individual A. arcuata.

1936. Sphaeralcea Fendleri Gray, var. californica Parish. The immaturity of your material makes it impossible to state definitely that it is referable to the variety, which differs chiefly in the somewhat longer obscurely rather than prominently apiculate carpels. The original specimen of the variety was glabrate toward the base, but the degree of pubescence seems to vary greatly. This species is very closely related indeed to S. miniata of South America and it is very probable that when we know more of the far southern plant that Dr. Gray's species will have to be referred to it as a

variety or may possibly even become sunk in one of the numerous varieties of S. miniata occurring in South America and Mexico. The very fact that the South American plant is so extremely variable suggests this possibility, but our material is altogether too inadequate to enable us to pass judgment at this time.

1039. Galium stellatum Kellogg. This matches well material referred here by various botanists. 1875. Oenothera hirtella Greene. I think that this might well be treated as only a variety of O. micrantha. It occurs to me that this is a problem which it would be possible for you to investigate. It is probable that these plants are really more distinct in the field than they appear in the herbarium. Compare Abrams flora, last edition. The difference in the shape of the leaves is frequently scarcely obvious and even when evident does not seem always to be correlated with the character of habit.

It has seemed fine to have before me so excellent a series of Cryptantha specimens. 326. C. muricata (H. & A.) Nels. & Macbr. 1950, 1886, 1958, 1598. C. Jonesii (Gray) Greene. In my last letter I referred the latter to the closely related C. muricata. It generally has larger flowers and somewhat different habit and apparently is much less common in your range. If you will refer to the Synoptical Flora you will see that Dr. Gray was becoming a little doubtful as to the specific distinctness of C. Jonesii and at one time and another I have shared this feeling, but on the whole the species may be readily distinguished. 1941. C. flaccida (Dougl.) Greene? - too young. Unless one is in a locality which cannot be visited readily at a later period it is scarcely worth while to collect Borages that are immature, as the determination must then be more or less a matter of guess work. 934, in part. C. affinis (Gray) Greene. 1935. C. leiocarpa (F. & M.) Greene, seemingly, but young. 1002. C. racemosa (Wats.) Greene. 4780, 4779. C. microstachys Greene. 1053. C. barbigera (Gray) Greene, - typical and the only specimen of those you sent that is to be referred to this species. Notice the long densely villous, as well as hispid, sepals. I think that sometimes C. intermedia and C. barbigera may intergrade, but on the whole they are nicely distinct. There is a tendency of all species of Cryptantha to exist in two forms, a large flowered and a small flowered state; C. Torreyana, var. grandiflora (Rydb.) Nels. & Macbr. is an example. For several weeks I have had in manuscript a new variety of C. barbigera which will represent the large flowered state of this species. Now that I have before me your large collection of C. intermedia, I am deeming it worth while to put on record this condition here and I shall take pleasure in calling the plant C. intermedia, var. Johnstonii. Nos. 1938, 257, 1959, 1934 represent the variety. 4773, 934 seemingly, 1948, 1957, 1960 seemingly, 4137 and 1620 represent typical C. intermedia. Dr. Gray based the species primarily upon small flowered specimens, altho he had before him the large flowered form. I have collected both in the vicinity of Pasadena and for sometime have felt that it would be highly satisfactory to designate so conspicuous a variation as this, but have neglected to do so. Further-

more, by indicating the relationship of the large flowered plant we do away with the tendency of confusion with C. barbigera, which generally has small flowers, but which remains distinct primarily because of its somewhat longer (when fully mature) calyx and much more villous character of the pubescence. 1981 is A. californica (F. & M.) Greene, toward the var. subglochidiata^{new}. We know very little as yet of the specific limits in this genus; either the species as now recognized are very variable or a number of segregates should be proposed. 1876. Plagiobothrys tenellus (Nutt.) Gray.

I have compared your specimens of Lupinus and Orobanche carefully with typical material and I believe that you have correctly determined them.

Thank you for your opinion of the three plants proposed by Dr. Davidson as new species. He wrote me in regard to the name of his Gnaphalium, but since he did not ask my opinion on the validity of his species I did not volunteer it. At the time, however, I was unable to see from our herbarium material how he expected to separate it from G. microcephalum. I thank you for the specimens and I trust that I may have the pleasure of hearing from you again. By the way, tho, kindly address me as "Mr."

Very sincerely,

James Muhlberg

